Claims

Claims 1-30 (Canceled)

31. (Currently Amended) An arm assembly to adapt a dental chair for right-side or left-side use:

a compensating arm pivotably connected to a rear side of a support for the dental chair to pivot between left and right sides;

a primary arm pivotably connected to the compensating arm at a primary pivot axis to pivot in a generally horizontal plane; and

a secondary arm connected to the compensating arm near the primary pivot axis and having multiple segments, the secondary arm being vertically and horizontally movable relative to the primary arm and the compensating arm and having a multi-function electronic control unit coupled to one of the multiple segments, the control unit having wiring extending through at least one of the multiple segments.

32. (Original) The arm assembly of claim 31, wherein a length of the compensating arm is set to position the primary pivot axis at a sufficient distance from the support to permit movement of the respective primary and secondary arms without interference.

33. (Currently Amended) The arm assembly of claim 31, wherein the secondary arm is positioned above ~~the~~ a pivot path of the primary arm.

34. (Canceled)

35. (Currently Amended) An arm assembly for positioning equipment in a dental chair system, comprising:

a first element for pivotable attachment to a dental chair;

a second element pivotably attached to an end of the first element at a substantially vertical first pivot axis;

a third element attached to the second element substantially along the first pivot axis; and

a fourth element attached to the third element at a substantially vertical second pivot axis that is horizontally spaced from the first pivot axis; and

a multi-function electronic control unit coupled to one of the elements and having wiring extending through at least one of the elements.

36. (Currently Amended) An arm assembly for a dental chair, comprising:

a link arm for pivotable connection to a rear of the dental chair allowing rotation in a substantially horizontal plane; ~~and~~

a support arm connected to the link arm, the support arm having multiple pivotably connected elongate segments capable of being positioned in space at a desired location and a means for preventing interference between the support arm and other structure adjacent the dental chair; and

a multi-function electronic control unit coupled to one of the segments of the support arm and having wiring extending through at least one of the segments.

37. (Canceled)

38. (Currently Amended) A multi-segmented arm assembly for a dental chair, comprising:

a link arm segment for pivotable attachment to a rear of the dental chair;

a first segment coupled to the link arm segment;

a second segment pivotably connected to the first segment at a substantially vertical pivot axis;

a third segment pivotably connected to the second segment at a substantially horizontal pivot axis;

a terminal segment pivotably connected to the third segment; and

~~The arm assembly of claim 37, further comprising~~ a multi-function electronic control unit coupled to one of the segments, the control unit ~~being~~ having wiring extending through at least one of the segments.

39. (Original) The arm assembly of claim 38, wherein the electronic control unit is coupled to the terminal segment.

40. (Original) The arm assembly of claim 38, wherein the electronic control unit is rotatably coupled to the terminal segment.

41. (Currently Amended) The arm assembly of claim ~~37~~ 38, further comprising at least one tool holder rotatably mounted to the terminal segment.

42. (Currently Amended) A multi-segmented arm assembly for a dental chair, comprising:

a link arm segment for pivotable attachment to a rear of the dental chair;

a first segment coupled to the link arm segment;

a second segment pivotably connected to the first segment at a substantially vertical pivot axis;

a third segment pivotably connected to the second segment at a substantially horizontal pivot axis; and

a terminal segment pivotably connected to the third segment,

~~The arm assembly of claim 37,~~ wherein at least one of the segments is configured to have a predetermined normal range of normal rotation about its respective pivot axis and to permit over-rotation beyond the predetermined normal range without damage to the at least one segment.

43. (Currently Amended) The arm assembly of claim ~~37~~ 38, wherein the terminal segment is pivotably connected at a substantially horizontal pivot axis.

44. (Currently Amended) The arm assembly of claim ~~37~~ 38, further comprising a parallelogram supporting structure for at least one segment.

45. (Currently Amended) The arm assembly of claim ~~37~~ 38, further comprising a parallelogram supporting structure for at least the third segment.

46. (Canceled)

47. (Currently Amended) A multi-segmented arm assembly for a dental chair, comprising:

a link arm segment for pivotable attachment to a rear of the dental chair;

a first segment coupled to the link arm segment;

a second segment pivotably connected to the first segment at a substantially vertical pivot axis;

a third segment pivotably connected to the second segment at a substantially horizontal pivot axis;

a fourth segment pivotably connected to the third segment at a substantially horizontal pivot axis;

a terminal segment pivotably connected to the fourth segment; and

~~The arm assembly of claim 46, further comprising~~ a multi-function electronic control unit coupled to one of the segments, the control unit being having wiring extending through at least one of the segments.

48. (Original) The arm assembly of claim 47, wherein the electronic control unit is coupled to the terminal segment.

49. (Original) The arm assembly of claim 47, wherein the electronic control unit is rotatably coupled to the terminal segment.

50. (Currently Amended) The arm assembly of claim ~~46~~ 47, further comprising at least one tool holder rotatably mounted to the terminal segment.

51. (Currently Amended) A multi-segmented arm assembly for a dental chair, comprising:

a link arm segment for pivotable attachment to a rear of the dental chair;

a first segment coupled to the link arm segment;

a second segment pivotably connected to the first segment at a substantially vertical pivot axis;

a third segment pivotably connected to the second segment at a substantially horizontal pivot axis;

a fourth segment pivotably connected to the third segment at a substantially horizontal pivot axis;

a terminal segment pivotably connected to the fourth segment; and

~~The arm assembly of claim 46,~~ wherein at least one of the segments is configured to have a predetermined normal range of normal rotation about its respective pivot axis and to permit over-rotation beyond the predetermined normal range without damage to the at least one segment.

52. (Currently Amended) The arm assembly of claim ~~46~~ 47, wherein the terminal segment is pivotably connected at a substantially horizontal pivot axis.

53. (Currently Amended) The arm assembly of claim ~~46~~ 47, further comprising a parallelogram supporting structure for at least one segment.

54. (Currently Amended) The arm assembly of claim ~~46~~ 47, further comprising a parallelogram supporting structure for at the third segment.

55. (Currently Amended) The arm assembly of claim ~~46~~ 47, further comprising parallelogram support structures for at least the third and fourth segments.

56. (Canceled)

57. (Canceled)

58. (Canceled)

59. (Canceled)

60. (Currently Amended) The arm assembly of claim ~~37~~ 38, wherein the link arm segment has a distal end and the first segment is connected to the link arm segment at the distal end of the link arm segment.

61. (Currently Amended) The arm assembly of claim ~~37~~ 38, wherein the first segment has a distal end and the second segment is connected to the first segment at the distal end of the first segment.

62. (Currently Amended) The arm assembly of claim ~~37~~ 38, wherein the second segment has a distal end and the third segment is connected to the second segment at the distal end of the second segment.

63. (Currently Amended) The arm assembly of claim ~~37~~ 38, wherein the third segment has a distal end and the terminal segment is connected to the third segment at the distal end of the third segment.

64. (Currently Amended) The arm assembly of claim ~~46~~ 47, wherein the link arm segment has a distal end and the first segment is connected to the link arm segment at the distal end of the link arm segment.

65. (Currently Amended) The arm assembly of claim ~~46~~ 47, wherein the first segment has a distal end and the second segment is connected to the first segment at the distal end of the first segment.

66. (Currently Amended) The arm assembly of claim ~~46~~ 47, wherein the second segment has a distal end and the third segment is connected to the second segment at the distal end of the second segment.

67. (Currently Amended) The arm assembly of claim ~~46~~ 47, wherein the third segment has a distal end and the fourth segment is connected to the third segment at the distal end of the third segment.

68. (Currently Amended) The arm assembly of claim ~~46~~ 47, wherein the fourth segment has a distal end and the terminal segment is connected to the fourth segment at the distal end of the fourth segment.

69. (Currently Amended) A multi-segmented arm assembly for a dental chair, comprising:

a link arm segment for pivotable attachment to a rear of the dental chair;

a first segment coupled to the link arm segment;

a second segment pivotably connected to the first segment at a substantially vertical pivot axis;

a third segment pivotably connected to the second segment at a substantially horizontal pivot axis; and

a terminal segment pivotably connected to the third segment,

~~The arm assembly of claim 37,~~ wherein at least the link arm segment, the second segment and the third segment have open interior areas in communication with each other through which conduits can be routed, the open interior areas of the link arm segment and the third segment being defined within closed cross-sections of the link arm segment and the third segment, respectively.

70. (Currently Amended) A multi-segmented arm assembly for a dental chair, comprising:

a link arm segment for pivotable attachment to a rear of the dental chair;

a first segment coupled to the link arm segment;

a second segment pivotably connected to the first segment at a substantially vertical pivot axis;

a third segment pivotably connected to the second segment at a substantially horizontal pivot axis;

a fourth segment pivotably connected to the third segment at a substantially horizontal pivot axis; and

a terminal segment pivotably connected to the fourth segment,

~~The arm assembly of claim 46,~~ wherein at least the link arm segment, the second segment and the third segment have open interior areas in communication with each other through which conduits can be routed, the open interior areas of the link arm segment and the third segment being defined within closed cross-sections of the link arm segment and the third segment, respectively.